Amendments to the Claims

	1.		(Currently Amended)	A method of transmitting a
2	communic	catio	on from a first network ent	tity to a second network entity, wherein the
	first netwo	ork (entity and the second netw	ork entity are coupled to a communication
4	medium, c	com	prising:	
	rec	ceiv	ing a communication from	a process operating on a first network entity,
6	wherein th	ne c	ommunication is directed	to a second network entity;-
	dis	strib	outing elements of said cor	nmunication into multiple portions, each said
8	portion co	rres	sponding to one of a plural	lity of channels established to convey a
	communic	catio	on between said first netwo	ork entity and said second network entity;
10	all	otti	ng individual elements of	said communication among a plurality of
	channels c	estal	blished to convey a comm	unication between said first network entity and
12	said secon	id n	etwork entity;	
	ene	cod	ing a first portion of said o	communication with a first starting delimiter;
14	ene	cod	ing a second portion of sai	id communication with a second starting
	delimiter,	wh	erein said second starting	delimiter is different from said first starting
16	delimiter;			
	sei	ndir	ng <u>said</u> a first allotment of	elements portion of said communication on a
18	first chann	nel e	established on a first comn	nunication medium coupled to said first
	network e	ntit	y and said second network	entity; and
20	sei	ndir	ng <u>said</u> a second allotment	of elements portion of said communication on
	a second o	char	nnel established on a secon	nd communication medium coupled to said
22	first netwo	ork	entity and said second net	work entity;
	wh	nere	in said communication is	transmitted to said second entity at a data rate
24	in excess	of o	ne gigabit per second.	

- 2. (Cancelled)
- 3. (Currently Amended) The method of claim 1; wherein said
 2 communication is an Ethernet frame and wherein each of said multiple elements
 portions of said communication comprises one or more bytes.
 - 4. (Previously Presented) A method of transmitting a



- 2 communication from a first network entity to a second network entity, wherein the first network entity and the second network entity are coupled to a communication
- 4 medium, comprising:

receiving a communication at a distribution module of a network interface

- device from a medium access control module across a first interface, wherein said distribution module is configured to distribute portions of said communication among
- 8 a plurality of communication channels;

distributing elements of said communication into multiple portions;

- sending a first portion of said communication on a first channel established on a first communication medium coupled to said first network entity and said second
- 12 network entity; and

sending a second portion of said communication on a second channel
established on a second communication medium coupled to said first network entity
and said second network entity.

- 5. (Original) The method of claim 4, wherein said first interface is
 2 configured to convey said communication at a data rate exceeding one gigabit per second.
- 6. (Original) The method of claim 4, in which said sending a first
 2 portion of said communication comprises forwarding an apportionment of said communication elements to a first physical coding module across a second interface;
- 4 and

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wherein said first physical coding module is configured to encode said

apportionment of communication elements into a series of codes for transmission over said first communication medium.

7. (Original) The method of claim 6, wherein said first physical coding module:

encodes a first element of said apportionment with a first start code if said first

element is the first element of said communication and otherwise encodes said first

element of said apportionment with a second start code; and

encodes a last element of said apportionment with a first end code if said last element is the last element of said communication and otherwise encodes said last

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- 8 element of said apportionment with a second end code.
- 8. (Original) The method of claim 6, wherein said second interface is
 2 configured to convey said first apportionment at a data rate exceeding one gigabit per second.
- (Previously Presented) The method of claim 4, in which said
 distributing comprises allotting elements of said communication among a plurality of channels established to convey a communication between said first network entity and
 said second network entity.
- 10. (Original) The method of claim 9, wherein each of said channels is configured to traverse a separate physical communication link.
- 11. (Original) The method of claim 9, wherein each of said channels is
 2 configured to traverse a common physical communication link, said common physical communication link comprising said first communication medium and said second
 4 communication medium.
- 12. (Previously Presented) The method of claim 4, wherein:
 2 one of said first portion of said communication and said second portion of said
 communication includes a first start symbol configured to indicate a start of said
 4 communication and the other of said first portion and said second portion includes a
 second start symbol configured to indicate a start of a portion of said communication;
 6 and
- one of said first portion of said communication and said second portion of said
 communication includes a first end symbol configured to indicate an end of said
 communication and the other of said first portion and said second portion includes a
 second end symbol configured to indicate an end of a portion of said communication.
- 13. (Previously Presented) The method of claim 4, further

 2 comprising:
 transmitting a first idle signal on said first channel and said second channel
- 4 prior to said receiving; and

transmitting a different idle signal on said first channel and said second channel after said sending a second portion of said communication.

14. (Previously Presented) The method of claim 4, further

2 comprising:

encoding the first element of said first portion of said communication with a

4 first starting delimiter; and

encoding the first element of said second portion of said communication with

6 a second starting delimiter.

15. (Original) The method of claim 14, further comprising:

encoding the last element of said first portion of said communication with a first ending delimiter; and

4 encoding the last element of said second portion of said communication with a second ending delimiter.

16. (Previously Presented) A method of receiving a communication at a second network entity from a first network entity, wherein the first network entity and the second network entity are coupled to a dedicated communication medium,

4 comprising:

receiving at a second network entity a first idle code on each of multiple

6 channels established between a first network and said second network entity:

receiving at said second network entity a first portion of a communication

8 from said first network entity on a first channel of said multiple channels;

receiving at said second network entity a second portion of said

10 communication on a second channel of said multiple channels;

collecting an element of said first portion and an element of said second

12 portion;

receiving at said second network entity a second idle code, different from said

14 first idle code, on each of said multiple channels; and

forwarding said communication toward a process operating on said second

16 network entity.

CONT

- 17. (Original) The method of claim 16, wherein said communication is 2 an Ethernet frame.
 - 18. (Previously Presented) The method of claim 17, wherein said
- 2 first portion of a communication comprises:
 - a first start signal configured to indicate a beginning of said communication;
- 4 and
- a first set of elements of said communication.
- 19. (Previously Presented) The method of claim 18, wherein said second portion of a communication comprises:
- a second start signal configured to indicate a beginning of a portion of said communication, said second start signal differing from said first start signal; and
- a second set of elements of said communication.
- 20. (Original) The method of claim 16, wherein said first
 communication channel and said second communication channel traverse a common communication medium.
- 21. (Original) The method of claim 16, wherein said first
 communication channel and said second communication channel traverse separate physical mediums.
- 22. (Original) The method of claim 16, in which said collecting
- 2 comprises:
- receiving at a collection module an element of said first communication
- 4 portion and an element of said second communication portion; and
 - combining said element of said first communication portion and said element
- 6 of said second communication portion.
 - 23. (Previously Presented) A method of receiving a communication
- at a second network entity from a first network entity, wherein the first network entity and the second network entity are coupled to a dedicated communication medium,
- 4 comprising:

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receiving at a second network entity a first portion of a communication from a

- first network entity on a first channel established between said first network entity and said second network entity;
- 8 receiving at said second network entity a second portion of said communication on a second channel established between said first network entity and said second network entity;

receiving at a collection module an element of said first communication

12 portion and an element of said second communication portion;

combining said element of said first communication portion and said element

14 of said second communication portion; and

sending said combined elements to a medium access control module across a

- 16 first interface toward a process operating on said second network entity:
- 24. (Original) The method of claim 23, wherein said first interface is
 configured to convey said combined elements at a data rate greater than one gigabit per second.
- 25. (Previously Presented) The method of claim 23, further

2 comprising:

receiving a first idle code on each of said first channel and said second channel

4 prior to said receiving a first portion of a communication; and

receiving a second idle code on each of said first channel and said second

- 6 channel after said receiving a second portion of said communication.
 - 26. (Cancelled)
 - 27. (Cancelled)
- 28. (Original) A method of receiving a communication from a first
- 2 network entity at a second network entity across a plurality of channels, comprising:

receiving synchronization information across each of a plurality of channels

4 coupling a first network entity to a second network entity;

receiving at said second network entity a set of bytes across each of said

6 channels;

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detecting a first byte and a last byte in each of said sets of bytes;	
decoding each of said sets of bytes; and	

re-assembling said sets of bytes into a stream of bytes of a communication directed from said first network entity to said second network entity.

29. (Original) The method of claim 28, in which:

- 2 said receiving synchronization information comprises receiving a first idle code on each of said channels; and
- 4 wherein said method further comprises receiving a second idle code on each of said channels after said receiving a set of bytes across each of said channels.
- 30. (Previously Presented) A method of operating a computer to communicate with a network entity, comprising:

operating a medium access control module configured to communicate a first frame from a computer system to a network entity and receive a second frame at said computer system from said network entity;

operating a distribution module to apportion contents of said first frame among a plurality of communication channels coupling said computer system to said network entity through one or more communication links; and

operating a collection module to combine contents of said second frame received through said plurality of communication channels;

wherein said distribution module and said collection module interface with each of said communication channels at a rate exceeding one gigabit per second; and wherein said medium access control module interfaces with said distribution module and said collection module at a rate substantially equal to the sum of said rates at which said communication channels interface with said distribution module and said collection module.

- 31. (Original) The method of claim 30, further comprising:
- operating a physical medium module configured to encode said first frame contents for transmission over said communication channels and decode said second
- 4 frame contents received over said communication channels.

32. (Cancelled)

- 33. (Previously Presented) The method of claim 30, wherein said
 2 first frame is a communication frame configured for transmission over a network compatible with an Ethernet communication protocol.
- 34. (Original) A network interface device for coupling a computer 2 system to a network, comprising:

a medium access control module configured to communicate with an

4 application executing on a computer system;

multiple physical coding modules, wherein each said physical coding module

- 6 is configured to encode packet bytes for transmission on a network medium and decode encoded bytes received from said network medium, and wherein said network
- 8 medium is configured to carry said bytes between said computer system and a network entity;

a distributor configured to accept a first packet from said medium access control module and divide said first packet into a first plurality of packet bytes for transmission across said network medium; and

a collector configured to accept a second plurality of packet bytes from said multiple physical coding modules and combine said second plurality of packet bytes into a second packet for transfer to said medium access control module.

- 35. (Original) The network interface device of claim 34, further
 comprising a first set of interfaces coupling said multiple physical coding modules to said distributor and said collector, wherein each of said first set of interfaces is
- 4 configured to operate at a rate exceeding one gigabit per second.
- 36. (Original) The network interface device of claim 35, further
 comprising a second interface coupling said distributor and said collector to said medium access control module, wherein said second interface is configured to operate
- 4 at a rate approximately equal to the sum of said operation rates of said first set of interfaces.
- 37. (Previously Presented) The network interface device of claim
 36, wherein said second interface is configured to operate at a data rate of

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38. (Cancelled)

edges of a clock signal; and

- 39. (Previously Presented) A device for implementing an Ethernet
 protocol to communicate Ethernet frames between a first network entity and a second network entity, comprising:
- a distributor configured to distribute bytes of a first Ethernet frame over a plurality of channels in a first order;
- a collector configured to receive bytes of a second Ethernet frame over said channels in a second order;
- a first interface coupling said distributor and said collector to a medium access control module at a data rate exceeding one gigabit per second, wherein data are transferred across said first interface in multi-byte units in synchronization with both
- a second interface coupling said distributor and said collector to a first physical coding module at a data rate exceeding one gigabit per second in synchronization with both edges of a second clock signal.
 - 40. (Previously Presented) The device of claim 39, wherein said first order and said second order are round robin.
- 41. (Currently Amended) The method of claim 1, wherein:
 2 said receiving comprises receiving a communication at a distribution module
 of a network interface device from a medium access control module across a first
- 4 interface; and

said distribution module is configured to perform said allotting of elements

distribution of said portions of said communication among said plurality of communication channels, including said first channel and said second channel.

42. (Previously Presented) The method of claim 41, wherein said first interface is configured to convey said communication at a data rate exceeding one gigabit per second.

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43. (Currently Amended) The method of claim 41, in which said

- 2 sending a first allotment of elements portion of said communication comprises forwarding an apportionment of said communication elements to a first physical
- 4 coding module across a second interface; and

wherein said first physical coding module is configured to perform said

- 6 encoding of said first portion of said communication encode said apportionment of communication elements with a series of codes for transmission over said first
- 8 communication medium.
 - 44. (Previously Presented) The method of claim 43, wherein said
- 2 first physical coding module:

encodes a first element of said apportionment with a first start code if said first

- 4 element is the first element of said communication and otherwise encodes said first element of said apportionment with a second start code; and
- encodes a last element of said apportionment with a first end code if said last
 element is the last element of said communication and otherwise encodes said last
 element of said apportionment with a second end code.
- 45. (Previously Presented) The method of claim 43, wherein said second interface is configured to convey said apportionment at a data rate exceeding one gigabit per second.
 - 46. (Cancelled)
 - 47. (Cancelled)
 - 48. (Currently Amended) The method of claim 1, further
- 2 comprising:

transmitting a first idle signal on said first channel and said second channel

4 prior to said receiving; and

transmitting a second idle signal on said first channel and said second channel

- 6 after said sending said second allotment of elements second portion of said communication;
- 8 wherein said second idle signal is different from said first idle signal.

49. (Cancelled)

	50.	(Currently Amended)	The method of claim 1 [[49]], further
2	comprising:		
	encod	ling the last element of said	first allotment of elements portion of said
4	communication	on with a first ending delim	iter; and
	encod	ling the last element of said	second allotment of elements portion of said
6	communicati	on with a second ending de	limiter;
	where	ein said second ending delin	niter is different from said first ending
8	delimiter.		
	51.	(Currently Amended)	A computer readable storage medium
2	storing instru	ctions that, when executed	by a computer, cause the computer to perform
	a method of t	ransmitting a communication	on from a first network entity to a second
4	network entit	y, the method comprising:	
	receiv	ving a communication from	a process operating on a first network entity,
6	wherein the c	communication is directed t	o a second network entity;
	<u>distril</u>	outing elements of said com	nmunication into multiple portions, each said
8	portion corre	sponding to one of a plurali	ity of channels established to convey a
	communicati	on between said first netwo	ork entity and said second network entity;
10	allotti	ing individual elements of s	aid communication among a plurality of
	channels esta	blished to convey a commu	unication between said first network entity and
12	said second r	network entity;	
	encod	ling a first portion of said c	ommunication with a first starting delimiter;
14	encoc	ling a second portion of said	d communication with a second starting
	delimiter, wh	erein said second starting d	lelimiter is different from said first starting
16	<u>delimiter;</u>		
	sendi	ng <u>said</u> a first allotment of c	elements portion of said communication on a
18	first channel	established on a first comm	nunication medium coupled to said first
	network entir	ty and said second network	entity; and
20	sendi	ng said a second allotment	of elements portion of said communication on
	a second cha	nnel established on a secon	d communication medium coupled to said
22	first network	entity and said second net	work entity;

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wherein said communication is transmitted to said second entity at a data rate 24 in excess of one gigabit per second.

- 52. (Previously Presented) The method of claim 4, wherein said communication is transmitted to said second entity at a data rate in excess of one gigabit per second.
- 53. (Previously Presented) The method of claim 4, wherein said communication is an Ethernet frame and wherein each of said multiple portions of said communication comprises one or more bytes.
- 54. (Previously Presented) A computer readable storage medium

 storing instructions that, when executed by a computer, cause the computer to perform a method of transmitting a communication from a first network entity to a second

 network entity, the method comprising:

receiving a communication at a distribution module of a network interface

device from a medium access control module across a first interface, wherein said
distribution module is configured to distribute portions of said communication among
a plurality of communication channels;

distributing elements of said communication into multiple portions;

- sending a first portion of said communication on a first channel established on a first communication medium coupled to said first network entity and said second network entity; and
- sending a second portion of said communication on a second channel
 established on a second communication medium coupled to said first network entity
 and said second network entity.
- 55. (Previously Presented) The method of claim 22, wherein said
 forwarding comprises sending said combined elements to a medium access control module across a first interface toward a process operating on said second network
 entity.
- 56. (Previously Presented) The method of claim 55, wherein said first interface is configured to convey said combined elements at a data rate greater

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than one gigabit per second.

57. (Previously Presented) A computer readable storage medium
2 storing instructions that, when executed by a computer, cause the computer to perform

a method of receiving a communication at a second network entity from a first

4 network entity, the method comprising:

receiving at a second network entity a first idle code on each of multiple

6 channels established between a first network and said second network entity;

receiving at said second network entity a first portion of a communication

8 from said first network entity on a first channel of said multiple channels;

receiving at said second network entity a second portion of said

10 communication on a second channel of said multiple channels;

collecting an element of said first portion and an element of said second

12 portion;

receiving at said second network entity a second idle code, different from said

14 first idle code, on each of said multiple channels; and

forwarding said communication toward a process operating on said second

16 network entity.

58. (Previously Presented) The method of claim 23, wherein said

2 communication is an Ethernet frame.

59. (Previously Presented) The method of claim 23, wherein said

2 first portion of a communication comprises:

a first start signal configured to indicate a beginning of said communication;

4 and

a first set of elements of said communication.

60. (Previously Presented) The method of claim 59, wherein said

2 second portion of a communication comprises:

a second start signal configured to indicate a beginning of a portion of said

4 communication, said second start signal differing from said first start signal; and

a second set of elements of said communication.

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	61. (Previously Presented) A computer readable storage medium
2	storing instructions that, when executed by a computer, cause the computer to perform
	a method of receiving a communication at a second network entity from a first
4	network entity, the method comprising:
	receiving at a second network entity a first portion of a communication from a
6	first network entity on a first channel established between said first network entity and
	said second network entity;
8	receiving at said second network entity a second portion of said
	communication on a second channel established between said first network entity and
10	said second network entity;
	receiving at a collection module an element of said first communication
12	portion and an element of said second communication portion;
	combining said element of said first communication portion and said element
14	of said second communication portion; and
	sending said combined elements to a medium access control module across a
16	first interface toward a process operating on said second network entity.
	62. (Previously Presented) The method of claim 28, wherein:
2	the communication is a packet; and
	said receiving a set of bytes comprises receiving across each said channel a
4	mini-frame comprising a portion of the packet.
	63. (Previously Presented) The method of claim 62, wherein said
2	detecting comprises:
	on a first of said channels, identifying a start of packet delimiter; and
4	on the other channels of said channels, identifying a start of mini-frame
	delimiter.
	64. (Previously Presented) The method of claim 62, wherein said
2	detecting comprises:
	on a first of said channels, identifying an end of packet delimiter; and
4	on the other channels of said channels, identifying an end of mini-frame
	delimiter.

	65. (Previously Presented) The method of claim 62, wherein:		
2	said re-assembling comprises merging said mini-frames to re-form the packet;		
	and		
4	the method further comprises forwarding the packet toward a medium access		
	control module.		
	66. (Previously Presented) The method of claim 28, wherein each		
2	said set of bytes is received at a data rate exceeding one gigabit per second.		
2	67. (Previously Presented) The method of claim 28, wherein said		
2	decoding comprises:		
	at a physical coding module coupled to each of said channels, decoding a set		
4	of bytes from codes received over said channel.		
	69 (Proviously Presented) A commuter readable store or madisus		
2	68. (Previously Presented) A computer readable storage medium		
2	storing instructions that, when executed by a computer, cause the computer to perform		
4	a method of receiving a communication from a first network entity at a second		
4	network entity across a plurality of channels, the method comprising:		
6	receiving synchronization information across each of a plurality of channels		
6	coupling a first network entity to a second network entity;		
8	receiving at said second network entity a set of bytes across each of said channels;		
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10	detecting a first byte and a last byte in each of said sets of bytes;		
10	decoding each of said sets of bytes; and re-assembling said sets of bytes into a stream of bytes of a communication		
12	directed from said first network entity to said second network entity.		
12	directed from said first network entity to said second network entity.		
	69. (Previously Presented) The method of claim 30, wherein said		
2	distribution module apportions said contents of said first frame by:		
	receiving a portion of said first frame from said medium access control		
4	module; and		
	distributing said portion of said first frame among said plurality of		

communication channels in round robin order.

		71. (Previously Presented) A c	computer readable storage medium
	2	storing instructions that, when executed by a con	mputer, cause the computer to perform
		a method of operating a computer to communication	ate with a network entity, the method
	4	comprising:	
		operating a medium access control modu	ale configured to communicate a first
	6	frame from a computer system to a network enti	ty and receive a second frame at said
		computer system from said network entity;	
1	8	operating a distribution module to apport	tion contents of said first frame
		among a plurality of communication channels co	oupling said computer system to said
ı	10	network entity through one or more communica	tion links; and
		operating a collection module to combine	e contents of said second frame
	12	received through said plurality of communication	on channels;
		wherein said distribution module and sai	d collection module interface with
	14	each of said communication channels at a rate ea	xceeding one gigabit per second; and
		wherein said medium access control mod	dule interfaces with said distribution
	16	module and said collection module at a rate subs	stantially equal to the sum of said
		rates at which said communication channels into	erface with said distribution module
	18	and said collection module	

(Previously Presented)

wherein the communication is directed to a second network entity;

communication from a first network entity to a second network entity, wherein the first network entity and the second network entity are coupled to a communication

distributing elements of said communication into multiple portions;

a first communication medium coupled to said first network entity and said second

receiving a communication from a process operating on a first network entity,

sending a first portion of said communication on a first channel established on

(Previously Presented)

said plurality of communication channels; and

collection module combines said contents of said second frame by:

merging, in round robin order, segments of said second frame received from

forwarding said merged segments to said medium access control module.

The method of claim 30, wherein said

A method of transmitting a

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medium, comprising:

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10	network	entity;	and
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sending a second portion of said communication on a second channel
established on a second communication medium coupled to said first network entity
and said second network entity;

wherein said communication is transmitted to said second entity at a data rate in excess of one gigabit per second; and

wherein one of said first portion of said communication and said second portion of said communication includes a first start symbol configured to indicate a start of said communication and the other of said first portion and said second portion includes a second start symbol configured to indicate a start of a portion of said communication; and

wherein one of said first portion of said communication and said second
portion of said communication includes a first end symbol configured to indicate an
end of said communication and the other of said first portion and said second portion
includes a second end symbol configured to indicate an end of a portion of said
communication.

73. (Previously Presented) The method of claim 72, wherein:

said receiving comprises receiving a communication at a distribution module of a network interface device from a medium access control module across a first

4 interface; and

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said distribution module is configured to distribute portions of said communication among a plurality of communication channels, including said first channel and said second channel.

74. (Previously Presented) The method of claim 73, wherein said
 2 first interface is configured to convey said communication at a data rate exceeding one gigabit per second.

75. (Previously Presented) The method of claim 73, in which said sending a first portion of said communication comprises forwarding an apportionment of said communication elements to a first physical coding module across a second

4 interface; and

wherein said first physical coding module is configured to encode said

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- 6 apportionment of communication elements into a series of codes for transmission over said first communication medium.
 - 76. (Previously Presented) The method of claim 75, wherein said
- 2 first physical coding module:

encodes a first element of said apportionment with a first start code if said first

- element is the first element of said communication and otherwise encodes said first 4 element of said apportionment with a second start code; and
- 6 encodes a last element of said apportionment with a first end code if said last element is the last element of said communication and otherwise encodes said last 8 element of said apportionment with a second end code.
- 77. (Previously Presented) The method of claim 75, wherein said 2 second interface is configured to convey said first apportionment at a data rate exceeding one gigabit per second.
- 78. (Previously Presented) The method of claim 72, in which said 2 distributing comprises:
- allotting elements of said communication among a plurality of channels 4 established to convey a communication between said first network entity and said second network entity, including said first channel and said second channel.
- 79. (Previously Presented) The method of claim 72, further 2

comprising:

transmitting a first idle signal on said first channel and said second channel

4 prior to said receiving; and

transmitting a second idle signal on said first channel and said second channel

6 after said sending a second portion of said communication;

wherein said second idle signal is different from said first idle signal.

- 80. (Previously Presented) The method of claim 72, further
- 2 comprising:

encoding the first element of said first portion of said communication with a

4 first starting delimiter; and

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-	

	encoding the first element of said second portion of said communication with
6	a second starting delimiter;
	wherein said second starting delimiter is different from said first starting
8	delimiter.

81. (Previously Presented) The method of claim 80, further 2 comprising:

encoding the last element of said first portion of said communication with a

4 first ending delimiter; and

encoding the last element of said second portion of said communication with a

6 second ending delimiter;

wherein said second ending delimiter is different from said first ending

8 delimiter.

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82. (Previously Presented) A computer readable storage medium

storing instructions that, when executed by a computer, cause the computer to perform a method of transmitting a communication from a first network entity to a second

network entity, wherein the first network entity and the second network entity are

coupled to a communication medium, the method comprising:

receiving a communication from a process operating on a first network entity, wherein the communication is directed to a second network entity;

8 distributing elements of said communication into multiple portions;

sending a first portion of said communication on a first channel established on a first communication medium coupled to said first network entity and said second network entity; and

sending a second portion of said communication on a second channel established on a second communication medium coupled to said first network entity and said second network entity;

wherein said communication is transmitted to said second entity at a data rate in excess of one gigabit per second; and

wherein one of said first portion of said communication and said second portion of said communication includes a first start symbol configured to indicate a start of said communication and the other of said first portion and said second portion

20 includes a second start symbol configured to indicate a start of a portion of said

communication; and

wherein one of said first portion of said communication and said second
 portion of said communication includes a first end symbol configured to indicate an
 end of said communication and the other of said first portion and said second portion
 includes a second end symbol configured to indicate an end of a portion of said
 communication.

83. (Previously Presented) A method of transmitting a

communication from a first network entity to a second network entity, wherein the first network entity and the second network entity are coupled to a communication

4 medium, comprising:

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transmitting a first idle signal on:

a first channel established on a first communication medium coupled to said first network entity and said second network entity; and

a second channel established on a second communication medium coupled to said first network entity and said second network entity;

receiving a communication from a process operating on said first network entity, wherein the communication is directed to said second network entity;

distributing elements of said communication into multiple portions; sending a first portion of said communication on said first channel; sending a second portion of said communication on said second channel; and transmitting a second idle signal on said first channel and said second channel

after said sending a second portion of said communication, wherein said second idle signal is different from said first idle signal;

wherein said communication is transmitted to said second entity at a data rate in excess of one gigabit per second.

84. (Previously Presented) The method of claim 83, wherein:

said receiving comprises receiving a communication at a distribution module of a network interface device from a medium access control module across a first

4 interface; and

said distribution module is configured to distribute portions of said

communication among a plurality of communication channels, including said first channel and said second channel.

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- 85. (Previously Presented) The method of claim 84, wherein said first interface is configured to convey said communication at a data rate exceeding one gigabit per second.
- 86. (Previously Presented) The method of claim 84, in which said sending a first portion of said communication comprises forwarding an apportionment of said communication elements to a first physical coding module across a second
- 4 interface; and

wherein said first physical coding module is configured to encode said

- 6 apportionment of communication elements into a series of codes for transmission over said first communication medium.
- 87. (Previously Presented) The method of claim 86, wherein said 2 first physical coding module:

encodes a first element of said apportionment with a first start code if said first element is the first element of said communication and otherwise encodes said first element of said apportionment with a second start code; and

- encodes a last element of said apportionment with a first end code if said last element is the last element of said communication and otherwise encodes said last element of said apportionment with a second end code.
- 88. (Previously Presented) The method of claim 86, wherein said second interface is configured to convey said first apportionment at a data rate exceeding one gigabit per second.
- 89. (Previously Presented) The method of claim 83, in which said distributing comprises:

allotting elements of said communication among a plurality of channels

4 established to convey a communication between said first network entity and said second network entity, including said first channel and said second channel.

90. (Previously Presented) The method of claim 83, wherein: one of said first portion of said communication and said second portion of said

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communication includes a first start symbol configured to indicate a start of said

4 communication and the other of said first portion and said second portion includes a second start symbol configured to indicate a start of a portion of said communication;

6 and

one of said first portion of said communication and said second portion of said

- 8 communication includes a first end symbol configured to indicate an end of said communication and the other of said first portion and said second portion includes a
- second end symbol configured to indicate an end of a portion of said communication.
 - 91. (Previously Presented) The method of claim 83, further
- 2 comprising:

encoding the first element of said first portion of said communication with a

4 first starting delimiter; and

encoding the first element of said second portion of said communication with

6 a second starting delimiter;

wherein said second starting delimiter is different from said first starting

8 delimiter.

92. (Previously Presented) The method of claim 91, further

2 comprising:

encoding the last element of said first portion of said communication with a

4 first ending delimiter; and

encoding the last element of said second portion of said communication with a

6 second ending delimiter;

wherein said second ending delimiter is different from said first ending

- 8 delimiter.
 - 93. (Previously Presented) The method of claim 83, wherein said
- 2 sending a first portion of said communication comprises:

encoding said first portion of said communication with a first start code if said

- 4 first portion of said communication includes the initial byte of said communication.
 - 94. (Previously Presented) The method of claim 93, wherein said
- 2 sending a first portion of said communication further comprises:

encoding said first portion of said communication with a second start code,

- 4 different from said first start code, if said first portion of said communication does not include the initial byte of said communication.
- 95. (Previously Presented) The method of claim 93, wherein said

2 sending a first portion of said communication further comprises:

encoding said first portion of said communication without a start code if said

- 4 first portion of said communication does not include the initial byte of said communication.
- 96. (Previously Presented) The method of claim 83, wherein said
- 2 sending a second portion of said communication comprises:

encoding said second portion of said communication with a first end code if

- 4 said second portion of said communication includes the final byte of said communication.
 - 97. (Previously Presented) The method of claim 96, wherein said sending a second portion of said communication further comprises:

encoding said second portion of said communication with a second end code,

- different from said first end code, if said second portion of said communication does not include the final byte of said communication.
- 98. (Previously Presented) The method of claim 96, wherein said

2 sending a second portion of said communication further comprises:

encoding said second portion of said communication without an end code if

- 4 said second portion of said communication does not include the final byte of said communication.
 - 99. (Previously Presented) A computer readable storage medium
- storing instructions that, when executed by a computer, cause the computer to perform a method of transmitting a communication from a first network entity to a second
- 4 network entity, wherein the first network entity and the second network entity are coupled to a communication medium, the method comprising:
- 6 transmitting a first idle signal on:

CONT

	•
	a second channel established on a second communication medium
10	coupled to said first network entity and said second network entity;
	receiving a communication from a process operating on said first network
12	entity, wherein the communication is directed to said second network entity;
	distributing elements of said communication into multiple portions;
14	sending a first portion of said communication on said first channel;
	sending a second portion of said communication on said second channel; and
16	transmitting a second idle signal on said first channel and said second channel
	after said sending a second portion of said communication, wherein said second idle
18	signal is different from said first idle signal;
	wherein said communication is transmitted to said second entity at a data rate
20	in excess of one gigabit per second.

said first network entity and said second network entity; and

a first channel established on a first communication medium coupled to

- 100. (Previously Presented) The device of claim 39, wherein said
 distributor distributes a substantially equivalent number of bytes of the first Ethernet frame over each channel in said plurality of channels.
- 101. (Previously Presented) The device of claim 39, wherein said collector receives a substantially equivalent number of bytes of the second Ethernet frame over each channel in said plurality of channels.
- 102. (Previously Presented) The device of claim 39, further
 comprising a separate physical coding module for each channel in said plurality of channels, including said first physical coding module corresponding to a first channel.
- 103. (Previously Presented) The device of claim 102, wherein each said physical coding module is configured to encode the bytes of the first Ethernet frame that are distributed over the corresponding channel in said plurality of channels.
- 104. (Previously Presented) The device of claim 39, wherein:
 2 a first idle is distributed over each channel in said plurality of channels before distributing the bytes of the first Ethernet frame; and

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- a second idle, different from said first idle, is distributed over each channel in said plurality of channels after distributing the bytes of the first Ethernet frame.
- 105. (Previously Presented) The device of claim 39, wherein a first set of bytes of the first Ethernet frame that are distributed over a first channel in said plurality of channels are preceded by a start code if said first set of bytes includes the
- 4 initial byte of the first Ethernet frame.
- 106. (Previously Presented) The device of claim 39, wherein bytes of the first Ethernet frame that are distributed over each channel in said plurality of channels are preceded by a start code.
- 107. (Previously Presented) The device of claim 106, wherein said
 start code is different for a first channel in said plurality of channels than for one or more other channels in said plurality of channels.
- 108. (Previously Presented) The device of claim 39, wherein a last set of bytes of the first Ethernet frame that are distributed over a last channel in said plurality of channels are followed by an end code if said last set of bytes includes the final byte of the first Ethernet frame.
- 109. (Previously Presented) The device of claim 39, wherein bytes of the first Ethernet frame that are distributed over each channel in said plurality of channels are followed by an end code.
- 110. (Previously Presented) The device of claim 109, wherein said end code is different for a first channel in said plurality of channels than for the other channels in said plurality of channels.
- 111. (Previously Presented) The device of claim 39, wherein each channel in said plurality of channel traverses a separate physical communication link between the first network entity and the second network entity.
 - 112. (Previously Presented) The device of claim 39, wherein each

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2	collector is further configured to:
	combine the bytes to produce the second Ethernet frame; and
4	forward the second Ethernet frame to the medium access control module.
	114. (Previously Presented) The device of claim 39, wherein said
2	clock signal and said second clock signal are the same clock signal.
	115. (Previously Presented) The network interface device of claim
2	34, wherein:
	said multiple physical coding modules include a first physical coding module;
4	said first plurality of packet bytes includes a first subset of bytes of said first
	packet; and
6	said first physical coding module is configured to:
	encode said first subset of bytes with a first start code if said first
8	subset of bytes includes the initial byte of said first packet; and
	otherwise, encode said first subset of bytes without a start code.
	116. (Previously Presented) The network interface device of claim
2	34, wherein:
	said multiple physical coding modules include a first physical coding module;
4	said first plurality of packet bytes includes a first subset of bytes of said first
	packet; and
6	said first physical coding module is configured to:
	encode said first subset of bytes with a first start code if said first
8	subset of bytes includes the initial byte of said first packet; and

otherwise, encode said first subset of bytes with a second start code

The network interface device of claim

channel in said plurality of channel traverses a common physical communication link

The device of claim 39, wherein said

between the first network entity and the second network entity.

(Previously Presented)

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113.

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34, wherein:

different from said first start code.

(Previously Presented)

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	said multiple physical coding modules include a first physical coding module;
4	said first plurality of packet bytes includes a last subset of bytes of said first
	packet; and
6	said first physical coding module is configured to:
	encode said last subset of bytes with a first end code if said last subset
8	of bytes includes the final byte of said first packet; and
	otherwise, encode said last subset of bytes without an end code.
	118. (Previously Presented) The network interface device of claim
2	34, wherein:
	said multiple physical coding modules include a first physical coding module;
4	said first plurality of packet bytes includes a last subset of bytes of said first
	packet; and
6	said first physical coding module is configured to:
	encode said last subset of bytes with a first end code if said last subset
8	of bytes includes the final byte of said first packet; and
	otherwise, encode said last subset of bytes with a second end code
10	different from said first end code.
	119. (Previously Presented) The method of claim 28, wherein said
2	decoding comprises:
	decoding a first start code in a one of said sets of bytes, said one set of bytes
4	containing an initial byte of the communication;
	wherein no other set of bytes includes a start code.
	120. (Previously Presented) The method of claim 28, wherein said
2	decoding comprises:
	decoding a first start code in one of said sets of bytes, said one set of bytes
4	containing an initial byte of the communication; and
	decoding a second start code in a different set of bytes, said second start code
6	differing from said first start code.
	121. (Previously Presented) The method of claim 28, wherein said

decoding comprises:

decoding a first end code in one of said sets of bytes, said one set of bytes 4 containing a final byte of the communication;

wherein no other set of bytes includes an end code.

122. (Previously Presented) The method of claim 28, wherein said 2 decoding comprises:

decoding a first end code in one of said sets of bytes, said one set of bytes

4 containing a final byte of the communication; and

decoding a second end code in a different set of bytes, said second end code

- 6 differing from said first end code.
- 123. (Previously Presented) The method of claim 4, wherein said
- 2 sending a first portion of said communication comprises:

encoding said first portion with a first start code if said first portion includes

- the initial element of said communication. 4
- 124. (Previously Presented) The method of claim 123, wherein said 2 sending a first portion of said communication further comprises:

encoding said first portion without a start code if said first portion does not include said initial element of said communication.

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 - 125. (Previously Presented) The method of claim 123, wherein said
- 2 sending a first portion of said communication further comprises:

encoding said first portion with a second start code, different from said first

- 4 start code, if said first portion does not include said initial element of said communication.
 - 126. (Previously Presented) The method of claim 4, wherein said
- 2 sending a second portion of said communication comprises:

encoding said second portion with a first end code if said second portion

- 4 includes the final element of said communication.
- 127. (Currently Amended) The method of claim 126 123, wherein
- said sending a second portion of said communication further comprises: 2

encoding said second portion without an end code if said second portion does not include said final element of said communication.

128. (Currently Amended) The method of claim 126 123, wherein said sending a second portion of said communication further comprises: encoding said second portion with a second end code, different from said first

4 end code, if said second portion does not include said final element of said communication.

129. (Currently Amended) The method of claim 1, wherein said 2 sending a first portion of said communication comprises:

encoding said first portion of said communication with a first start code if said

first portion of said communication includes the initial byte of said communication.

130. (Currently Amended) The method of claim <u>1</u> 129, wherein said sending a first portion of said communication further comprises:

encoding said first portion of said communication with a second start code, different from said first start code, if said first second portion of said communication does not include the initial byte of said communication.

131. (Currently Amended) The method of claim 130 129, wherein said second starting delimiter is a null starting delimiter sending a first portion of said communication further comprises:

encoding said first portion of said communication without a start code if said
 first portion of said communication does not include the initial byte of said
 communication.

132. (Currently Amended) The method of claim 1, wherein said encoding sending a second portion of said communication comprises:

encoding said second portion of said communication with a first end code if

said second portion of said communication includes the final byte of said
communication.

133. (Currently Amended) The method of claim 132, wherein said

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2	encoding sending a second portion of said communication further comprises:
	encoding said second portion of said communication with a second end code,
4	different from said first end code, if said second portion of said communication does
	not include the final byte of said communication.
	134. (Currently Amended) The method of claim 132, wherein said
2	encoding sending a second portion of said communication further comprises:
	encoding said second portion of said communication without an end code if
4	said second portion of said communication does not include the final byte of said
	communication.
	135. (New) A method of transmitting a communication from a first
2	network entity to a second network entity, wherein the first network entity and the
	second network entity are coupled to a communication medium, comprising:
4	receiving a communication from a process operating on a first network entity,
	wherein the communication is directed to a second network entity;
6	distributing elements of said communication into multiple portions, each said
	portion corresponding to one of a plurality of channels established to convey a
8	communication between said first network entity and said second network entity;
	sending a first portion of said communication on a first channel established on
10	a first communication medium coupled to said first network entity and said second
	network entity; and
12	sending a second portion of said communication on a second channel
	established on a second communication medium coupled to said first network entity
14	and said second network entity;
•	wherein said communication is transmitted to said second entity at a data rate
16	in excess of one gigabit per second; and
	wherein:
18	one of said first portion of said communication and said second portion
	of said communication includes a first start symbol configured to indicate a
20	start of said communication and the other of said first portion and said second
	portion includes a second start symbol configured to indicate a start of a
22	portion of said communication; and

one of said first portion of said communication and said second portion

24	of said communication includes a first end symbol configured to indicate an
	end of said communication and the other of said first portion and said second
26	portion includes a second end symbol configured to indicate an end of a
	portion of said communication.

136. (New) The method of claim 135, wherein:

2 said receiving comprises receiving a communication at a distribution module of a network interface device from a medium access control module across a first

4 interface; and

said distribution module is configured to perform said distribution of said portions of said communication among said plurality of communication channels, including said first channel and said second channel.

137. (New) The method of claim 136, wherein said first interface is configured to convey said communication at a data rate exceeding one gigabit per second.

138. (New) The method of claim 136, in which said sending a first portion of said communication comprises forwarding an apportionment of said communication elements to a first physical coding module across a second interface;

4 and

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wherein said first physical coding module is configured to encode said

apportionment of communication elements with one or more of said first start symbol,
said second start symbol, said first end symbol and said second end symbol.

139. (New) The method of claim 138, wherein said second interface is configured to convey said apportionment at a data rate exceeding one gigabit per second.

140. (New) The method of claim 135, further comprising: transmitting a first idle signal on said first channel and said second channel prior to said receiving; and

transmitting a second idle signal on said first channel and said second channel after said sending said second portion of said communication;

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wherein said second idle signal is different from said first idle signal.